REMARKS

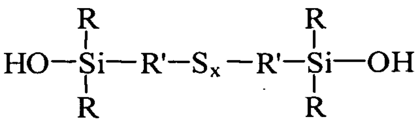
Entry of the foregoing, re-examination and reconsideration of the subject matter identified in caption, as amended, pursuant to and consistent with 37 C.F.R. §1.112, and in light of the remarks which follow, are respectfully requested.

By the present amendment, claims 1 and 3 have been amended to correct typographical errors. Claims 1-26 remain pending in this application.

Claims 1-4, 7, 8, 11, 12 and 14-26 were rejected under 35 U.S.C. §103(a) as obvious over WO 02/030939 (Tardivat) in view of Japanese Patent Document No. 07-02115 (Nakajima) for the reasons given in paragraph (2) of the Office Action. U.S. Patent No. 6,774,255 was cited as an English language equivalent of WO '939. Claims 1-6, 8-10 and 12-26 were rejected under 35 U.S.C. §103(a) as obvious over French Patent No. 00/01012 (Penot) and further in view of Nakajima '115. U.S. Patent No. 6,951,897 was cited as an English language equivalent of FR '012. Reconsideration and withdrawal of these rejections are respectfully requested for at least the reasons which follow.

The present invention relates to a tire belt and a tire containing same, the belt comprising a rubber composition based on at least an isoprene elastomer, a reinforcing inorganic filler such as silica and a silane polysulfide coupling agent having the specific formula (I) of claim 1. These rubber compositions containing the silane of formula (I), when compared with formulations containing the conventional and well-known TESPT or "Si69" silane (see comparative tests III-2 in pages 18-21), unexpectedly provided improved results, including a very significant increase in the resistance to fatigue and cracking (see comments on page 21, lines 13-25, together with the results of Table 2).

WO '939 discloses a monohydroxysilane polysulfide of the formula:



$$\mathrm{HO}-\underset{R}{\overset{R}{\mathrm{Si}}}-R'-S_x-R'-\underset{R}{\overset{R}{\mathrm{Si}}}-\mathrm{OH}$$

used as a coupling agent in rubber compositions for tire manufacture (see U.S. Patent No. 6,774,255, column 9, lines 62-65). However, this document does not specifically teach using the monohydroxysilanes in a tire belt. The silanes are used in compositions for the manufacture of tire treads (note column 10, lines 19 and 32; column 14, line 49; and column 16, line 37). The tread and belt in a tire are completely distinct parts having functions, requirements and characteristics which are totally different.

The requirements demanded of a tire belt are discussed at length on pages 2 and 20 of the specification: acceptable rigidity, hysteresis and processability. One skilled in the art could not reasonably predict that a composition suitable for tire treads would be useful for tire belts. Thus, those skilled in the art of tire belts would not likely look in the direction of tire treads for problem solving.

JP '115 describes a rubber composition used as a belt coating comprising natural rubber, a mixture of a specific carbon black and silica as filler. As any rubber composition using silica as reinforcing filler, this rubber composition requires a coupling agent to bind the natural rubber to the silica surface, namely a silane coupling agent.

Since WO '939 is not directed to improving the properties of tire belts, there would have been no motivation to combine the respective teachings of WO '939 and JP '115. Moreover, one could not have predicted that using the coupling agents set forth in the present claims would provide the unexpected results shown in the present specification.

FR '012 describes a rubber composition usable for the manufacture of tires, comprising a diene elastomer, a reinforcing inorganic filler such as silica, and a polysulfurized alkoxysilane as coupling agent, said alkoxysilane being associated with an aldimine (R-CH=N-R) and a guanidine derivative. There is no disclosure in this document of a tire belt, specifically, no mention of a tire belt using an isoprene rubber and the silane of formula (I). Among the coupling agents generically disclosed in FR '012 (see column 10, lines 5-29 of U.S. Patent No. 6,951,897), it is clear that the conventional TESPT agent is preferred; note column 10, line 63, and the numerous Examples of Tables 1, 3, 5, 7, 11 and 13 which only use TESPT as the coupling agent. Also, the diene elastomers used in FR '012 are preferably SBR and BR. There is no Example of any rubber composition incorporating an isoprene elastomer.

The disclosure of FR '012 is directed to tire tread manufacture and expresses no interest in improving the properties of a tire belt. Thus, there is clearly no motivation to combine FR '012 and JP '115. Even if those skilled in the art would have combined the disclosures of these documents, they would have simply been encouraged to use a conventional and preferred alkoxysilane such as TESPT in the belt coating rubber of JP '115 and not the specific silane of formula (I) of claim 1. It is noted that on page 4 of JP '115, the document uses Si69 – the commercial name of TESPT – as coupling agent.

In summary, none of the cited references discloses or suggests a tire belt or a tire containing said tire belt as defined in claim 1. It would not have been obvious to use the compositions disclosed in WO '939 or FR '012 in making tire belts because of the unique characteristics required of tire belts as opposed to tire treads.

For at least these reasons, the §103 rejection over Tardivat '939 in view of Nakajima '115, and Penot '012 in view of Nakajima '115 should be reconsidered and withdrawn. Such action is earnestly solicited.

From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order and such action is earnestly solicited. If there are any questions concerning this paper or the application in general, the Examiner is invited to telephone the undersigned at (703) 838-6683 at his earliest convenience.

Respectfully submitted,

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